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MAY 11, 1987

CHEMICAL & ENGINEERING

First-quarter earnings rise for most chemical companies
Page 20

# NEWS

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## SUPERCONDUCTIVITY

An electrical revolution in the making
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CHEMICAL & ENGINEERING
NEWS

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■ **Government, industry, and environmental groups differ sharply over international proposals to regulate chlorofluorocarbons.** **Page 5**

■ **World Bank announces major new environmental protection initiatives.** **Page 5**

■ **Congress repeals 1978 law that prohibited large energy users from burning oil and natural gas in new boilers.** **Page 6**

■ **Chemical industry has mixed reactions to House trade bill, which would strengthen U.S. intellectual property laws but allow 60% tariff reductions.** **Page 6**

*Cover:* Superconductivity is demonstrated as pellet of superconducting ceramic floats above a magnet at Argonne National Laboratory. The magnet induces superconducting currents in the pellet, previously cooled to 77 K with liquid nitrogen. The currents create a countermagnetic force to levitate the pellet

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## Business

**Earnings of 30 largest U.S. chemical firms rose** a composite 34% in first-quarter 1987, continuing string of rises. **Page 20**

## Government

**NSF chemistry advisory group** endorses new postdoctoral fellowship program, discusses plans for science and technology centers. **Page 26**

## Technology

**Catalytic tail-gas desulfurization process,** now being commercialized by Mobil Oil, has low energy costs and no waste disposal problems. **Page 29**

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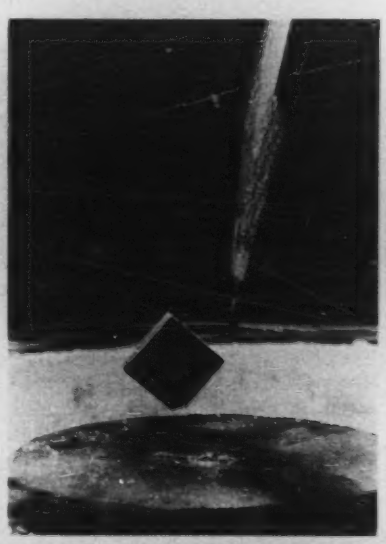
## Books

**Malcolm MacPherson and E. P. Dutton** trace the early history of nuclear energy and the U.S.-German race for the atomic bomb. **Page 31**



## News Focus

**Recent discoveries of metal-oxide ceramics that are superconductors at temperatures near 100 K may lead to a revolution in electricity.** **Page 7**

# Chemical Earnings' String of Rises Continues in First Quarter

**Profits of 30 largest U.S. chemical firms increased a composite 34%, but income of oil producers fell despite higher chemicals earnings**

William J. Storck, C&EN New York

The string of earnings increases for the chemical industry continued in the first quarter of 1987. According to composite results for the 30 largest U.S. chemical companies, profits rose about 34% over the same period in 1986. Earnings also increased at most diversified companies that are producers of chemicals.

However, oil companies that produce chemicals were not so fortunate, as total earnings fell because of the weak oil economy. Nonetheless, their earnings from chemical operations improved over the year-earlier level.

Chemical companies are still reaping the benefits of the streamlining of their operations over the past several years. These include the modernization of plants, realignment of corporate operations such as disposal of minimally profitable businesses, and, probably most important, the reduction of employment rolls and associated employment costs. This streamlining has lowered breakeven points at chemical companies and has provided them, in many cases, with earnings leverage sufficient to boost profits out of proportion to even a slight improvement in operations.

Fortunately the companies are getting slightly higher operating rates as demand increases with the improving economy. Only two major markets for chemicals—fertilizers and oil field chemicals—continue to slide. There are indications of some improvement even in these two sectors, as the farm economy begins to show signs of strengthening and as the price of oil increases enough to justify some domestic oil field activity.

Consequently, output of chemicals and allied products in the first quarter of 1987 improved almost 5% over the year-earlier level, according to seasonally adjusted government data.

Although official labor department statistics show prices still below year-earlier levels, they are strengthening on a quarter-to-quarter basis. And, according to chemical company executives, they are strengthening for certain products. Pricing problems in a period of falling oil and gas prices is an old story for the chemical industry, as chemical customers demand passthrough of any cost break that the producers receive on raw materials. Now that the price of oil has increased, price increases seem to be easier to push through.

Also aiding demand in the first quarter was a steadily improving foreign trade picture. Export demand for U.S. chemicals has been growing while imports into the U.S. have been declining. However, this trend is not as strong as the chemical industry would like. And it is somewhat skewed by large imports of finished goods containing chemicals that are not reflected in the chemical trade figures.

As a result of the increased de-

## Chemical industry leaders for the first quarter

**Sales**

| Rank 1987 | | $ Millions | Rank 1986 |
|---|---|---|---|
| 1 | Dow Chemical | $3015.0 | 1 |
| 2 | Monsanto | 1866.0 | 2 |
| 3 | Union Carbide | 1681.0 | 3 |
| 4 | American Cyanamid | 1014.1 | 4 |
| 5 | W. R. Grace | 926.6 | 5 |
| 6 | Hercules | 554.3 | 7 |
| 7 | National Distillers | 656.7 | 10 |
| 8 | Rohm & Haas | 533.1 | 8 |
| 9 | Air Products | 527.1 | 9 |
| 10 | B. F. Goodrich | 485.6 | 6 |

**Earnings[a]**

| | $ Millions | Rank 1986 |
|---|---|---|
| Dow Chemical | $246.0 | 1 |
| Monsanto | 138.0 | 2 |
| Union Carbide | 66.0 | 7 |
| American Cyanamid | 65.1 | 3 |
| Rohm & Haas | 57.4 | 6 |
| Hercules | 47.7 | 4 |
| Ethyl | 46.4 | 8 |
| Air Products | 41.1 | 5 |
| National Distillers | 28.9 | 12 |
| International Flavors | 27.6 | 10 |

**Profitability**

| | Earnings as % of sales | Rank 1986 |
|---|---|---|
| International Flavors | 15.4% | 1 |
| Ethyl | 11.9 | 3 |
| Betz Laboratories | 11.0 | 2 |
| Rohm & Haas | 10.8 | 8 |
| Loctite | 9.7 | 7 |
| Nalco Chemical | 8.6 | 4 |
| Dow Chemical | 8.2 | 11 |
| Lubrizol | 8.1 | 11 |
| Air Products | 7.8 | 4 |
| Vista Chemical | 7.4 | 13 |
| Monsanto | 7.4 | 10 |

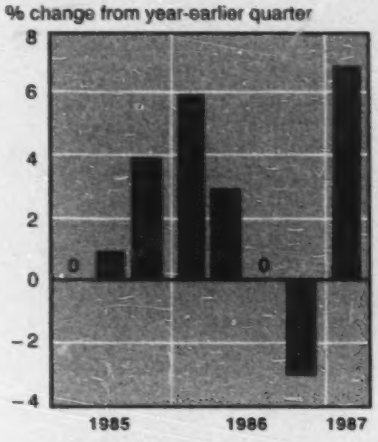
Note: For 30 chemical companies listed on page 22. a After taxes.

# Chemical industry 1987 first-quarter results

- Sales climbed 7%
- Earnings jumped 34%
- Profit margins increased
- Production rose 4.7%
- Prices fell slightly

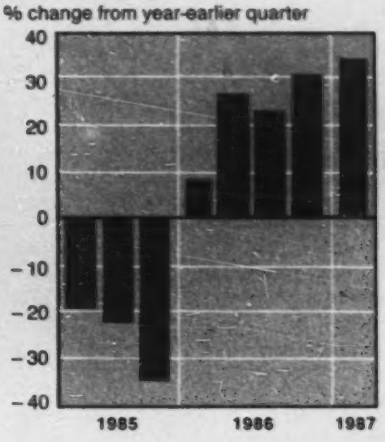
**Sales**

% change from year-earlier quarter



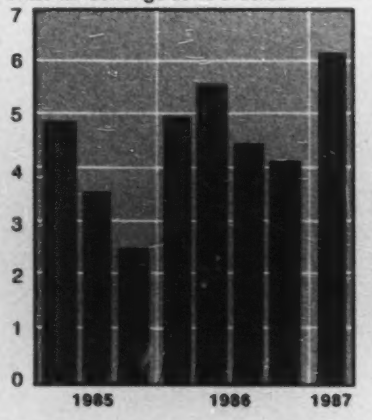

**Earnings**

% change from year-earlier quarter



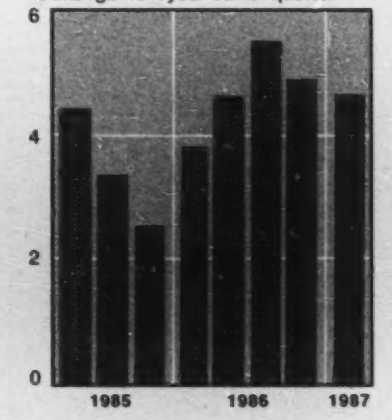

**Profit margins**

After-tax earnings as % of sales



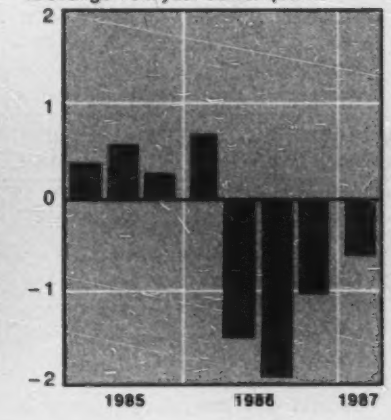

**Production**

% change from year-earlier quarter




**Prices**

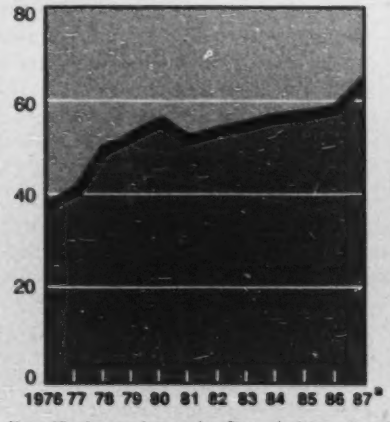
% change from year-earlier quarter




## Sales in 1987 will climb about 10% and earnings will increase 25%, boosting profit margins to 5.7%

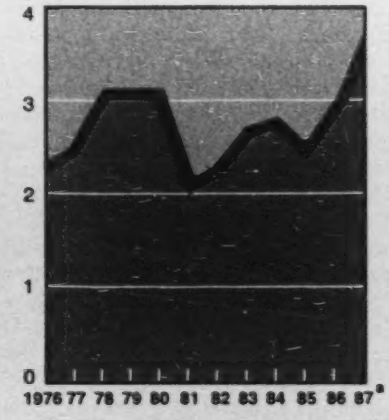
**Annual sales**

$ Billions



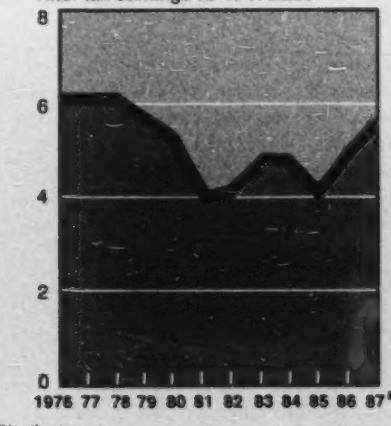

**Annual earnings**

$ Billions




**Annual profit margins**

After-tax earnings as % of sales




**Note:** All sales, earnings, and profit-margin data are based on combined results of 30 companies listed on page 22. a C&EN estimates.

## Earnings, profit margins increased substantially in first quarter

| | FIRST-QUARTER 1987 | | | | | | 12-MONTH RUNNING DATA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sales | Earnings[a] | Change from 1986 | | Profit margin[b] | | Change from 1986 | | Profit margin[b] | |
| | ($ millions) | | Sales | Earnings | 1987 | 1986 | Sales | Earnings | 1987 | 1986 |
| Air Products[c] | $ 527.1 | $ 41.1 | 6% | 5% | 7.8% | 7.8% | 7% | −2% | 7.1% | 7.8% |
| American Cyanamid[c] | 1,014.1 | 65.1 | 10 | 33 | 6.4 | 5.3 | 10 | 46 | 5.6 | 4.2 |
| Aristech | 208.7 | 13.6 | 7 | 84 | 6.5 | 3.8 | na | na | na | na |
| Betz Laboratories | 88.6 | 9.7 | 6 | 2 | 11.0 | 11.3 | 5 | −3 | 10.2 | 11.0 |
| Cabot[c] | 331.2 | 19.4 | −3 | 3 | 5.9 | 5.5 | −11 | −6 | 5.1 | 4.8 |
| Chemed | 91.2 | 4.3 | 11 | 24 | 4.7 | 4.2 | 5 | −3 | 4.5 | 4.8 |
| Crompton & Knowles | 55.8 | 2.4 | 4 | 11 | 4.2 | 4.0 | −2 | 8 | 3.8 | 3.5 |
| Dow Chemical[c,d] | 3,015.0 | 246.0 | 10 | 41 | 8.2 | 6.4 | −1 | 560 | 7.0 | 1.1 |
| Ethyl[c] | 389.0 | 46.4 | 3 | 32 | 11.9 | 9.3 | 3 | 31 | 11.6 | 9.1 |
| First Mississippi | 71.3 | 2.3 | 9 | 3 | 3.3 | 3.4 | −9 | −60 | 1.7 | 3.8 |
| Freeport-McMoRan | 218.8 | 7.7 | 37 | −16 | 3.5 | 5.7 | 0 | −27 | 7.8 | 10.7 |
| H. B. Fuller | 137.4 | 3.6 | 15 | 31 | 2.7 | 2.3 | 17 | 38 | 3.6 | 3.1 |
| B. F. Goodrich[c] | 485.6 | 3.8 | −33 | def | 0.8 | def | −27 | −319 | 1.7 | −0.6 |
| W. R. Grace[c] | 926.6 | 11.7 | 10 | 75 | 1.3 | 0.8 | −43 | −82 | 0.5 | 1.7 |
| Hercules[c] | 664.3 | 47.7 | 3 | 5 | 7.2 | 7.0 | 2 | 45 | 7.9 | 5.5 |
| International Flavors | 179.0 | 27.6 | 21 | 25 | 15.4 | 14.9 | 23 | 23 | 14.0 | 14.0 |
| International Minerals[c] | 456.0 | 18.6 | 53 | 589 | 4.1 | 0.9 | 23 | −223 | −0.9 | 0.9 |
| Loctite | 89.7 | 8.7 | 34 | 81 | 9.7 | 7.2 | 25 | 27 | 9.3 | 9.1 |
| Lubrizol | 272.6 | 22.1 | −1 | 26 | 8.1 | 6.4 | −18 | −1 | 7.7 | 6.3 |
| Monsanto[c] | 1,866.0 | 138.0 | 7 | 17 | 7.4 | 6.8 | 2 | 50 | 4.6 | 3.1 |
| Nalco Chemical | 191.6 | 16.5 | 7 | 18 | 8.6 | 7.8 | 8 | −13 | 8.1 | 10.0 |
| National Distillers[c] | 656.7 | 28.9 | 39 | 64 | 4.4 | 3.7 | −3 | 35 | 3.5 | 2.5 |
| Olin[c] | 467.7 | 21.5 | 4 | −20 | 4.6 | 6.0 | 0 | −3 | 3.0 | 3.1 |
| Pennwalt | 276.5 | 12.4 | 4 | −11 | 4.5 | 5.2 | 7 | 191 | 4.5 | 1.7 |
| Petrolite | 63.9 | 4.0 | −16 | −31 | 6.3 | 7.7 | −13 | −26 | 5.8 | 6.9 |
| Reichhold Chemicals | 183.8 | 2.5 | −12 | 96 | 1.4 | 0.6 | −13 | −209 | 1.2 | −1.0 |
| Rohm & Haas[c] | 533.1 | 57.4 | −1 | 50 | 10.8 | 7.1 | 1 | 34 | 9.1 | 6.8 |
| Union Carbide[c] | 1,681.0 | 66.0 | 6 | 74 | 3.9 | 2.4 | −15 | −13 | 2.5 | 2.4 |
| Vista Chemical | 151.8 | 11.2 | 1 | 25 | 7.4 | 6.0 | na | na | na | na |
| Witco[c] | 333.9 | 13.3 | −3 | −6 | 4.0 | 4.1 | −6 | 8 | 4.8 | 4.2 |
| Total 15 larger companies | $13,347.3 | $824.7 | 7% | 37% | 6.2% | 4.8% | −9% | 18% | 4.3% | 3.3% |
| Smaller 15 companies | $ 2,280.8 | $148.6 | 7% | 19% | 6.5% | 5.9% | 1% | 9% | 6.4% | 6.0% |
| GRAND TOTAL[d] | $15,628.1 | $973.3 | 7% | 34% | 6.2% | 5.0% | −8% | 16% | 4.6% | 3.7% |

a Earnings from continuing operations, excluding major nonrecurring and extraordinary items. b Earnings as a percentage of sales. c One of the 15 largest companies. d Averages for 12-month running data do not include Dow, where figures include a major nonrecurring item, and Aristech and Vista for which figures are not available. def = deficit. na = not available.

mand and slightly higher prices for some chemical products, earnings and profitability soared in the first quarter for major chemical companies. For the 30 major chemical companies surveyed by C&EN, composite earnings for the quarter amounted to $973 million, up 34% on a sales boost of just 7% from the first quarter of 1986 to $15.6 billion.

Profitability as a result moved up considerably. Profit margins (earnings as a percentage of sales) for the 30 companies averaged 6.2% in the first quarter, up from 5.0% in the year-earlier period.

On a quarter-to-quarter basis, earnings for the 30 companies climbed 51% in the first quarter from a weak fourth-quarter 1986. Sales were up 3.3% on a quarterly basis. The first-quarter profit margin of 6.2% was a vast improvement from 4.2% in the fourth quarter of 1986.

As in the past few quarters, the larger, more diversified companies surveyed outperformed the smaller companies in terms of growth. The smaller firms, however, continued to win out in profitability. For the 15 larger firms surveyed by C&EN, earnings climbed an average of 37% to total $825 million on a sales rise of 7% to $13.3 billion. Earnings for this group soared almost 76% on a sales increase of 7% from the fourth quarter of 1986. Profit margins for first-quarter 1987 for the 15 firms averaged 6.2%, compared with 4.8% in the first quarter of 1986 and just 3.7% in the fourth quarter of that year.

For the 15 smaller companies, first-quarter earnings increased a composite 19% from first-quarter 1986 to $149 million, again on a 7% sales rise to $2.28 billion. Compared with last year's fourth-quarter, sales were down about 12% and earnings fell 14%. Profit margins at the smaller companies averaged 6.5% in the first quarter of this year, compared

## Ground rules for C&EN earnings analysis

C&EN's quarterly report on financial performance of the U.S. chemical industry contains data from the 30 largest U.S. basic chemical companies and from 34 oil and diversified companies, each with more than $200 million in annual chemical sales.

To be included in the table of basic chemical producers, a company must have at least 50% of its sales in chemicals. That is why Du Pont, for example, is included in the table of diversified manufacturers.

In referring to chemical sales, C&EN means those chemicals whose molecular composition has been changed in the course of manufacture. Hence, chemical sales include those of traditional categories of basic petrochemicals and inorganics, organic intermediates and inorganic compounds, polymers such as plastics and fibers, agricultural chemicals, and specialty derivatives.

In listing earnings, the survey gives after-tax income for continuing operations before nonrecurring items and extraordinary charges. Foreign currency translations are included.

## Profits up for most diversified firms, down for oil producers

| | % chemical sales | FIRST-QUARTER 1987 Sales ($ millions) | Earnings[a] | Change from 1986 Sales | Earnings | Profit margin[b] 1987 | 1986 |
|---|---|---|---|---|---|---|---|
| **OIL AND GAS COMPANIES** | | | | | | | |
| American Petrofina | 23% | $ 539.5 | $ 19.8 | 7% | def | 3.7% | def |
| Amoco | 15 | 5,200.0 | 260.0 | −12 | −21% | 5.0 | 5.6% |
| Ashland | 20 | 1,600.0 | −8.0 | −11 | def | def | 2.3 |
| Atlantic Richfield | 33 | 3,744.0 | 245.0 | −13 | −18 | 6.5 | 7.0 |
| Chevron | 9 | 6,800.0 | 150.0 | −23 | −56 | 2.2 | 3.9 |
| Exxon | 8 | 19,435.0 | 1,044.0 | −13 | −46 | 5.4 | 8.7 |
| Kerr-McGee | 14 | 546.8 | 20.2 | −24 | −9 | 3.7 | 3.1 |
| Mobil | 4 | 12,700.0 | 252.0 | −9 | −43 | 2.0 | 3.2 |
| Occidental Petroleum | 13 | 4,157.0 | 70.0 | 14 | −22 | 1.7 | 2.5 |
| Phillips Petroleum | 17 | 2,540.0 | −32.0 | −18 | def | def | 3.1 |
| Shell Oil | 20 | 4,500.0 | 108.0 | −4 | −61 | 2.4 | 5.9 |
| Standard Oil | 5 | 2,488.0 | 200.0 | −14 | −21 | 8.0 | 8.7 |
| Sun Co. | 3 | 2,230.0 | 38.0 | −33 | −74 | 1.7 | 4.4 |
| Texaco | 4 | 8,500.0 | 118.0 | −11 | −64 | 1.4 | 3.4 |
| **DIVERSIFIED MANUFACTURERS** | | | | | | | |
| Allied-Signal | 25 | 2,637.0 | 102.0 | 8 | −41 | 3.9 | 7.0 |
| Borden | 33 | 1,428.5 | 44.0 | 26 | 20 | 3.1 | 3.2 |
| Borg-Warner | 31 | 878.0 | 39.0 | 5 | 11 | 4.4 | 4.2 |
| Dexter | 38 | 187.1 | 9.5 | 14 | 16 | 5.1 | 5.0 |
| Du Pont | 45 | 7,128.0 | 391.0 | −1 | −3 | 5.5 | 5.6 |
| Eastman Kodak | 22 | 2,655.2 | 178.0 | 13 | 266 | 6.7 | 2.1 |
| Eli Lilly | 19 | 1,059.0 | 205.2 | 7 | 19 | 19.4 | 17.5 |
| Emhart | 15 | 602.6 | 22.9 | 18 | 20 | 3.8 | 3.7 |
| Englehard | 29 | 538.0 | 13.5 | 2 | 18 | 2.5 | 2.2 |
| FMC | 51 | 724.3 | 25.3 | −4 | −2 | 3.5 | 3.4 |
| GAF | 48 | 191.1 | 20.6 | 9 | 37 | 10.8 | 8.5 |
| Kaiser Aluminum | 12 | 537.3 | −29.3 | 98 | def | def | 6.1 |
| Koppers | 42 | 271.7 | −3.0 | 6 | def | def | def |
| Merck | 9 | 1,111.1 | 201.3 | 21 | 28 | 18.1 | 17.1 |
| 3M | 15 | 2,207.0 | 213.0 | 7 | 18 | 9.7 | 8.7 |
| Morton Thiokol | 37 | 519.8 | 36.2 | 0 | 0 | 7.0 | 7.0 |
| PPG Industries | 18 | 1,261.0 | 86.9 | 11 | 26 | 6.9 | 6.1 |
| Pfizer | 9 | 1,119.6 | 192.0 | 8 | 14 | 17.1 | 16.4 |
| Tyler | 40 | 256.1 | 1.0 | 11 | 16 | 0.4 | 0.4 |
| Vulcan Materials | 27 | 212.8 | 11.4 | 6 | 43 | 5.4 | 4.0 |

a From continuing operations excluding nonrecurring and extraordinary items. b Earnings as a percentage of sales. def = deficit.

with 5.9% in the same period in 1986 and 6.6% in fourth-quarter 1986.

The restructurings, improved costs, and better volumes all are evident in company comments on the quarter's earnings. For Du Pont, the largest U.S. chemical producer, chairman Richard E. Heckert says that its increased chemical earnings reflected improved results for most businesses, notably fibers, white pigments, and specialty polymers. And, he points out, results benefited from improved worldwide demand and lower costs attributable to lower energy and feedstock prices, earlier restructurings, and aggressive efforts to improve productivity.

Chemicals carried the day at Du Pont in the first quarter, where after-tax operating income for chemical operations was 55% ahead of the comparable period in 1986. The company's oil earnings fell 64% from the same period last year.

For Dow Chemical, whose earnings were up 41% from last year's first quarter, chairman Paul F. Oreffice states, "Volume increases were reported for most products, and the pricing environment continued to improve in response to a better balance between supply and demand worldwide. In basic chemicals, volumes were up and prices were generally firm or trending upward."

Pricing also was important at Olin. In spite of a decline in earnings for the quarter, pretax earnings benefited from improved pricing, according to chairman John M. Henske. He notes, "During the quarter, pricing trends for our products began to improve for the first time in several years and by year's end we expect our price index to be up."

Monsanto chairman Richard J. Mahoney says, "Volumes and prices for many chemical-based products were ahead of year-ago levels." However, he cautions, "the costs of certain raw materials have increased significantly in recent months,

## Chemical earnings surge at oil companies

Although oil company earnings overall were suffering because of slumping oil prices, earnings from chemical operations certainly were not ailing.

For seven oil companies that also produce significant quantities of chemicals—chiefly petrochemicals—earnings from chemical operations in the first quarter rose 28% from 1986's first quarter to a composite $498 million. That's somewhat lower than the increase in earnings for the 30 largest U.S. chemical firms. However, if Shell Oil, whose chemical earnings plummeted 44% in the first quarter, is omitted from the group, the increase becomes almost 45% over the previous year's quarter. Shell's earnings are not comparable with those of the other six companies, because it sold a large part of its chemical operations during 1986 and has not restated its chemical earnings to reflect the sale.

Exxon was the biggest gainer in the first quarter, with a 62% increase in chemical earnings to $186 million. Exxon says that strong demand boosted volumes both in the U.S. and abroad. However, a portion of the foreign increase came from nonrecurring tax credits.

For Atlantic Richfield, which registered a 43% increase in chemical earnings to $83 million, the results were split. Arco Chemical, which produces intermediate chemicals and specialty products, says volumes and margins improved for its oxygenated products, resulting in after-tax earnings of $61 million, a 135% increase over first-quarter 1986. However, for the company's Lyondell Petrochemical Co. unit, lower profits on refined products and petrochemicals resulted in a 31% decline in earnings to $22 million for the quarter, including a nonrecurring charge.

Mobil, with a 34% rise in chemical profits to $43 million, reported higher earnings and increased sales volume in both domestic petrochemical operations and U.S.- and European-oriented polypropylene film.

For Amoco, with a 22% rise in chemical earnings to $88 million, it was the same story. The company says that sales volumes for chemical and polymer products increased as demand continued to grow, and earnings on polymer products were higher than the relatively weak levels of the previous year. Amoco says that results for most plastic products and specialty chemicals activities also improved.

| $ Millions | First-quarter earnings on chemical operations* 1987 | 1986 | % change |
|---|---|---|---|
| Amoco | $ 88.0 | $ 72.0 | 22% |
| Atlantic Richfield | 83.0 | 58.0 | 43 |
| Chevron | 50.0 | 33.0 | 52 |
| Exxon | 186.0 | 115.0 | 62 |
| Mobil | 43.0 | 32.0 | 34 |
| Shell | 40.0 | 72.0 | −44 |
| Texaco | 8.0 | 6.0 | 33 |
| TOTAL | $498.0 | $388.0 | 28% |

* After-tax earnings

squeezing some profit margins." Monsanto's earnings in the first quarter were up 17% over the same period last year.

Not all pricing news from the companies was good, however. PPG Industries chairman Vincent A. Sarni says that at that company, substantial chemicals volume improvements were offset somewhat by continued weak pricing.

Other companies, like Monsanto, have been confronted with rising raw material costs. For Reichhold Chemicals, whose earnings almost doubled from the same period last year, chairman C. Robert Powell states that, though earnings showed improvement over last year's first quarter, the improvement is not so good as the one recorded by the firm in the second half of 1986. "This reflects the dramatic increase in raw material costs in the first quarter, particularly affecting our emulsion polymers business," he adds.

Plastics, and particularly polyvinyl chloride, seemed to have a good quarter. For instance, Vista Chemical's earnings increased 25%, and they were up primarily because of higher PVC profits, according to Vista president and chief executive officer John D. Burns. The improvement came from higher product prices and lower-cost ethane feedstock.

At B. F. Goodrich, the PVC industry leader, chairman John D. Ong says that demand for PVC products is high and the company likely will report an improved level of operating income this year.

The agricultural chemicals market also began some strengthening in the first quarter. Earnings from crop chemicals increased 34% to $165 million on a sales rise of 18% to $382 million at Monsanto. "Monsanto Agricultural Co. recorded excellent results as Roundup herbicide continued to penetrate new markets around the world," Monsanto's Mahoney notes. "Lasso herbicide maintains satisfactory volumes, in spite of a highly competitive marketplace and anticipated reductions in corn acreage planted in the U.S."

International Minerals & Chemical chairman George Kennedy adds, "Cost performance continued to be outstanding and volume was as forecast. What really helped the quarter, though, was some slight improvement in fertilizer prices. The benefit to our bottom line demonstrated the earnings leverage in IMC's fertilizer business."

The good results in the first quarter have caused optimism about the balance of the year at many chemical companies. Olin's Henske says: "We expect operating income for the second quarter to be up significantly from last year and overall earnings to be comparable to this year's first quarter. The outlook for 1987 points to significant increases in Olin's operating income for the full year."

Monsanto's Mahoney predicts, "We expect 1987 to be another good year for Monsanto. Our strong businesses are remaining strong and our weaker businesses are improving their financial performance through strict cost control. Given a stable economic environment, we anticipate significant progress this year toward our stated long-term goals."

And Dow's Oreffice says, "The momentum our business built in the first quarter will continue in the second quarter and should make for a successful year." □